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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
MEINECKE DIAZ, SUSANNA M	

ART UNIT	PAPER NUMBER
3623	

DATE MAILED: 03/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/307,187	FRIEDLAND ET AL.	
	Examiner	Art Unit	
	Susanna M. Diaz	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 November 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8,10,12-23,27-41,43-66 and 68-92* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,10,12-23,27-41,43-66 and 68-92* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 29, 2004 has been entered.

Claims 1-8, 10, 12-23, 27-41, 43-66, and 68-83 have been amended.

Claims 9, 11, 24-26, 42, and 67 stand as cancelled.

Claims 84-92 have been added.

Claims 1-8, 10, 12-23, 27-41, 43-66, and 68-92 are pending.

2. The previously pending claim objection is withdrawn in response to Applicant's amendment of claim 7.

Response to Arguments

3. Applicant's arguments filed November 29, 2004 have been fully considered but they are not persuasive.

Applicant argues that Fields does not teach a dynamic scheduling of resources (pages 24-25 of Applicant's response). Merriam Webster's Collegiate® Dictionary (10th ed) defines "dynamic" as "marked by usu. continuous and productive activity or

change." Fields computes schedules on a daily basis. The schedules are optimized based on various factors that can change over time, including the expected end point of a task (abstract; col. 1, line 64 through col. 2, line 35). This variability and ability to account for schedule adjustments implies that a dynamic scheduling of resources occurs.

On pages 25-32 of the response, Applicant reiterates arguments presented in the response filed December 22, 2003. Examiner maintains her position, as presented in the response to arguments section of the final Office action mailed on March 30, 2004.

In conclusion, Applicant's arguments are not persuasive.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 43 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 43 is dependent from itself, which is improper. For examination purposes, it will be assumed that claim 43 is dependent from claim 41 instead.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-8, 17-23, and 27-41, 43-66, and 68-92 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fields et al. (U.S. Patent No. 5,111,391).

As per claims 1 and 86, Fields et al. disclose a computer-implemented method of dynamically scheduling an arbitrary number of resources from among a plurality of resources of a work-producing system, said method comprising the steps of:

(a) in a computer system, sorting, in a predetermined order, available resources by an arbitrary number of tasks from among a plurality of tasks of the work-producing system performable per resource, and rate per task, and determining at least one queue responsive to said sorting, wherein the tasks are subject to an arbitrary number of constraints from among a plurality of constraints of the work-producing system, wherein the rate per task characterizes the processing of pharmaceutical orders processed in at least one task for a time period (col. 2, lines 12-35, and column 6, lines 51-65, the resources are sorted; see column 1, lines 32-45, and column 6, lines 43-46, resources were sorted according to pay rate and rate per task -- Implicit in assessing the "percentage of an employee's time that it takes to do a particular task," as recited in col.

1, lines 34-35, is an understanding of the unit(s) of work, i.e., tasks, that the employee completes in a certain time period; column 3, lines 26-57);

(b) assigning the available resources to at least one task from among a plurality of tasks of the work-producing system subject to at least one constraint from among a plurality of constraints of the work-producing system (see column 1, lines 32-45, and column 2, lines 12-35, the resources are constrained).

As per claim 1, Fields et al. teach a system that can be used for any type of resource allocation. Fields et al. do not explicitly teach of the system comprising a pharmacy. However, it would have been obvious to one of ordinary skill in the art to use the work producing system in a pharmacy since a pharmacy is nothing more than a specialized system (i.e. for distributing pharmaceuticals) which requires an efficient way to allocate resources and tasks. Official Notice is taken that it is old and well-known in the art of managing a pharmacy to fulfill pharmaceutical orders by performing the tasks of reviewing a pharmaceutical order, dispensing a pharmaceutical prescription as part of the pharmaceutical order, and verifying the pharmaceutical order. One of ordinary skill in the art would be motivated to use the system of Fields et al. in a pharmacy to perform the tasks of reviewing a pharmaceutical order, dispensing a pharmaceutical prescription as part of the pharmaceutical order, and verifying the pharmaceutical order as it is an effective and helpful way to schedule employees in any type of resource/task environment.

As per claim 2, Fields et al. discloses a method of dynamically scheduling an arbitrary number of resources according to claim 1, further comprising the step of

redetermining the at least one queue after assignment of the available resources, and designating the assigned resource unavailable until a predetermined time when the assigned available resources expires (see column 5, line 58 through column 6, line 2, the tasks are in a task line and the arrangement of the queue is determined, the resource becomes available and is able to take another item from the task list when a shift is completed).

As per claim 3, Fields et al. disclose a method of dynamically scheduling an arbitrary number of resources according to claim 1, further comprising the step of incrementing time to time of a next event (see column 3, lines 58-64, column 4, lines 37-49, and column 5, lines 8-29, the time of the task is determined; the time is incremented to find the time of the next event).

As per claim 4, Fields et al. disclose a method of dynamically scheduling an arbitrary number of resources according to claim 1, wherein the at least one task constraint includes maximum resource capacity, defined start and end times, and scheduled down time (see column 1, lines 32-45, and column 3, lines 9-15, task constraints include capacity and labor regulations, which define start and end times, as well as scheduled down time).

As per claim 5, Fields et al. disclose a method of dynamically scheduling an arbitrary number of resources according to claim 1, wherein the at least one task constraint includes at least one team assignment constraint, and the available

resources are assigned to the at least one task until the at least one team assignment constraint is satisfied (see column 1, lines 32-45, and column 2, lines 12-35, the task constrain includes a team assignment constraint such as the skill level of the employee or the relationship between the different tasks).

As per claim 6, Fields et al. disclose a method of dynamically scheduling an arbitrary number of resources according to claim 1, wherein said assigning step (b), further comprises the steps of assigning the available resources to the at least one task for a maximum time of task, and removing the at least one task from a resource skill set (see column 1, lines 15-45, and column 3, lines 9-15, the maximum time of a task is determined and the task is removed from the resource when an employee maximum shift length occurs).

As per claim 7, Fields et al. disclose a method of dynamically scheduling an arbitrary number of resources according to claim 1, wherein the at least constraint includes an end of shift constraint, and wherein the available resources are not assigned to the at least one task when the assignment violates the end of shift constraint (see column 3, lines 9-15, the end of shift constraint may be due to labor regulations as it could be the resource, or employee, reached their maximum shift length or their breaktime and therefore are not assigned another task).

As per claim 8, Fields et al. disclose a method of dynamically scheduling an arbitrary number of resources according to claim 1, wherein the predetermined order

comprises an ascending order (see column 5, lines 59-67, through column 6, lines 1-2, the resources are allocated in an ascending order, tasks that require a higher skill level are assigned to resources that have a higher skill level).

As per claim 17, Fields et al. disclose a method of dynamically scheduling an arbitrary number of resources according to claim 1, wherein the available resources are characterized by the following information:

• person identifier, person name, person type, shift assignment by day of week, task preference (see column 6, lines 49-65),

• shift name, shift start time, shift end time, lunch start, break 1 start, break 2 start (see column 4, lines 37-48, the shift times are set; see column 3, lines 9-15, the breaks and meal times are mandated by labor regulations),

• person type categories, eligible tasks (see column 6, lines 51-54, the skills characterize the employee),

• task name, rate per task, task capacity, task color for Gantt chart, flow percentages between tasks (see figure 3, column 1, lines 32-45, and column 6, lines 43-46, resources were sorted according to pay rate and rate per task; and task capacity),

• projected incoming volume by task and time (see column 7, lines 18-22), and

• start of day queues in each task (see column 6, lines 21-27, the record contains the start times for each task and each resource).

As per claim 18, Fields et al. disclose a method of dynamically scheduling an arbitrary number of resources according to claim 1, wherein said assigning step (b) assigns the available resources using at least one of the following outputs:

• people allocation: number of people assigned to each task for each time period (see column6, lines 21-32, the Schedule Head Record contains each persons task at a particular time period),

• queue data: queue length for each task area by time period (see column 6, lines 51-68, through column 7, lines 1-7), and

• Gantt chart: person task assignment for each time period (see figure 3).

Fields et al. do not explicitly teach that the volume data is the number of RX's processed in each task for each time period. However, it would be obvious to one of ordinary skill that in order to schedule tasks the number of tasks must be known. One of ordinary skill in the art would be motivated to include the volume data as it explicitly discloses the volume of the tasks and allows a more accurate description of the number of tasks that the user must assign to resources.

As per claim 19, Fields et al. disclose a method of dynamically scheduling an arbitrary number of resources according to claim 1, wherein said assigning step (b), further comprises the steps of assigning the available resources to a varying set of tasks having varying individual rates (see column 3, lines 37-6, lines 43-46, the resources are assigned to tasks with varying rates).

As per claim 20, Fields et al. disclose a method of dynamically scheduling an arbitrary number of resources according to claim 1. Fields et al. did not explicitly teach the use of Markov Chains. However, one of ordinary skill in the art would teach the assigning step (b) further comprising the steps of assigning the available resources to the at least one task with a work flow between tasks following a Markov Chain. It would have been obvious to one of ordinary skill in the art to use Markov Chains as they are a very well known type of queuing theory. One of ordinary skill in the art would have been motivated to using Markov Chains as it would allow the user to easily picture the flow between tasks. One would be motivated to use Markov Chains as they are a reliable and accurate way to depict queuing theory.

As per claim 21, Fields et al. disclose a method of dynamically scheduling an arbitrary number of resources according to claim 3, wherein the next event includes at least one of a resource or task that becoming subsequently available, incoming work, a queue reaching zero, and a minimum time in the task (see column 6, lines 26-32, 51-68, through column 7, lines 1-7, once the resource and task becomes available a new task is assigned knowing the task's minimum time).

As per claim 22, Fields et al. disclose a method of dynamically scheduling an arbitrary number of resources according to claim 1, further comprising the step of repeatedly performing said steps (a) - (b) until the end of a predetermined time period is

reached (see column 3, lines 46-67, the steps are repeated until closing time of each store location).

As per claim 23, Fields et al. disclose a method of dynamically scheduling an arbitrary number of resources according to claim 1, further comprising the step performing the at least one task responsive to the resource assigned in said assigning step (b) (see column 2, lines 12-35, the resource completes the task assigned and then performs another task).

As per claims 27, 28, and 85, Fields et al. do not explicitly teach of the system comprising a pharmacy. However, it would be obvious to one of ordinary skill in the art to use the work producing system in a pharmacy since a pharmacy is nothing more than a specialized system (i.e. for distributing pharmaceuticals) which requires an efficient way to allocate resources and tasks. One of ordinary skill in the art would be motivated to use the system of Fields et al. in a pharmacy as it is an effective and helpful way to schedule employees in any type of resource/task environment. Furthermore, Official Notice is taken that it is old and well-known in the art that tasks in a pharmacy commonly include vertical fills, baker fills, prepack fills, front fills, narcotics fills, control fills, insulin syringe fills, managed care review, Dr. call verification, eligibility verification, drug utilization review, mail handling, phone refill handling, phone prescription handling, safing, label generating, checking, packing, manifesting, and wanding. Therefore, for the reasons set forth above, it would also have been obvious to one of ordinary skill in

the art at the time of Applicant's invention to adapt Fields' invention to allocate resources for performing the tasks of vertical fills, baker fills, prepack fills, front fills, narcotics fills, control fills, insulin syringe fills, managed care review, Dr. call verification, eligibility verification, drug utilization review, mail handling, phone refill handling, phone prescription handling, safing, label generating, checking, packing, manifesting, and wanding in order to reap the benefits of Fields' effective resource allocation method in a pharmaceutical environment, thereby making Fields' invention more versatile.

As per claim 29, Fields et al. teach the rate of a resource to accomplish a task in the abstract and column 3, lines 26-34. This rate of an accomplishment is also the rate of availability of a resource. For example, if Mary can fill 60 prescription bottles in an hour, then Mary can complete a prescription bottle ever minute and is available after a single minute. However, if Sally can fill 12 prescriptions in an hour, then Sally can complete a prescription bottle every five minutes and is available every five minutes. Therefore, Fields et al. does teach the rate of available resources by teaching the percent of time needed to accomplish a task. Fields et al. also teaches that this is an average rate of a group, or queue, as the shifts are optimized. In column 3, lines 40-45, and column 5, lines 8-34, Fields et al. teaches of an average rate of a group, or queue, since the shifts are optimized. As Fields et al. discloses the at least one queue by dividing a current task queue by an average rate of the available resources for each task in the current task queue, Fields et al. teaches all aspects of normalization. Therefore, Fields discloses normalization as normalization is the process of the at least

one queue dividing a current task queue by an average rate of the available resources for each task in the current task queue.

As per claim 84, Fields discloses resources including at least one of: humans, machines, and teams (abstract).

[Claims 31-41, 43-57, 87-89] Claims 31-41, 43-57, and 87-89 recite limitations already addressed by the rejection of claims 1-8, 17-23, 27-30, and 84-86 above; therefore, the same rejection applies.

As per claim 41, Fields et al. disclose a method of dynamically scheduling an arbitrary number of resources according to claim 31, wherein said sorting step (a) and said assigning step (b) are performed according to a resource allocation model, and wherein the resource allocation model includes entities with variable attributes having variable quantities that transform through at least one network of nodes, and wherein each node of the at least one network of nodes includes an associated set of attributes and parameters (see column 6, lines 51-65, the resources, or employees, with attributes that have quantities that are transformed; for example, the number and skill level of the employees is updated during the shifts in the schedule).

As per claim 43, Fields et al. disclose a method of dynamically scheduling an arbitrary number of resources according to claim 43. Fields et al. do teach a Gantt Chart which displays the attributes and the entities in a graphical formation (fig. 3). Fields

teaches the use of a Gantt chart to display schedules of the staff (Fig. 3). A Gantt chart embodies "nominal, graphical and symbolic conventions" corresponding to attributes of the workers, who are part of a network of nodes.

As per claim 44, Fields et al. disclose a method of dynamically scheduling an arbitrary number of resources according to claim 43, wherein the available resources include the attributes of the nodes, and the available resources undergo transformational processes arriving at least one arbitrary state or passing through a series of states that may become the attributes of the resources (see column 6, lines 51-68, through column 7, lines 1-7, the resources undergo a transformation by going through a state or states).

As per claim 45, Fields et al. disclose a method of dynamically scheduling an arbitrary number of resources according to claim 43, wherein the parameters are specified as at least one of inputs, outputs, capacities, operational processes, functional behaviors, movement logics, and other dynamic parameters (see column 6, lines 21-26, and 43-65, the parameters of the resources are specified).

As per claim 46, Fields et al. disclose a method of dynamically scheduling an arbitrary number of resources according to claim 41, wherein the resource allocation model stores at least one of historical values, theoretical values, the attributes and constellations of the nodes, and wherein the resource allocation model provides multiple bases of comparison for monitoring, measuring, and evaluating real-time operational data and operational performance for management functions (see column 1, lines 9-15,

and column 2, lines 12-35, the model stores and uses historical data which it can use to evaluate operational data and performance. It is inherent that the historical data would be kept and used for a purpose).

As per claim 47, Fields et al. disclose a method of dynamically scheduling an arbitrary number of resources according to claim 41. Fields et al. teach a resource allocation model. However, Fields et al. do not explicitly teach a model that includes significance and performance criteria, associated tableaus and scenarios, and wherein abstract model elements are stored as at least one of the parameters and the attributes, and as at least one of functional, logical, graphical and symbolic forms. However, significance and performance criteria are old and well known techniques used in the art. Processes are constantly evaluated to evaluate current results and determine improvements. Therefore, it would be obvious to include significance and performance criteria as it would allow one to determine the efficiency of the scheduling. It would also be obvious to store parameters and attributes as at least one of functional, logical, graphical and symbolic forms as it would be and efficient way to display the parameters and the attributes. One would be motivated to include both the significance and performance criteria, as well as the stored format of the parameters as it would be very user-friendly.

[Claims 58-66, 68-83, 90-92] Claims 58-66, 68-83, and 90-92 recite limitations already addressed by the rejection of claims 1-8, 17-23, 27-57, and 84-89 above; therefore, the same rejection applies.

Allowable Subject Matter

8. Claims 10 and 12-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

The closest prior art of record is Fields et al. (U.S. Patent No. 5,111,391). While Fields teaches the underlying scheduling methodology recited in claim 10 (i.e., assigning an arbitrary number of tasks from among a plurality of tasks based on rate per task and the details thereof), Fields does not disclose or suggest the application of such a scheduling methodology to allocating specific pharmacy-related tasks based on a resource allocation model that includes entities with variable attributes having variable quantities that transform through at least one network of nodes, wherein each node of the at least one network of nodes includes an associated set of attributes and parameters, the attributes include the resource, and each node or at least one network of the node exists for a predetermined period of time. This combination of features is recited in claim 10 as well as dependent claims 12-16; therefore, claims 10 and 12-16 are deemed to be allowable over the prior art of record.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susanna M. Diaz whose telephone number is (703) 305-1337. The examiner can normally be reached on Monday-Friday, 9 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on (703) 305-9643. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

February 23, 2005

Susanna Diaz

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